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RECEIVED 29 April 2025
ACCEPTED 26 August 2025
PUBLISHED 17 September 2025

CITATION

Zhu M and Tu T (2025) Associations between parental psychological control and negative emotions in early adolescents: a moderated mediation model. *Front. Psychol.* 16:1618832. doi: 10.3389/fpsyg.2025.1618832

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Associations between parental psychological control and negative emotions in early adolescents: a moderated mediation model

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Introduction: Previous research on negative emotions has primarily focused on middle and high school students. Based on the cumulative risk model framework, this study targeting early adolescents integrates parental psychological control, peer rejection and aggressive behavior to investigate their associations with negative emotions, while also examining the protective moderation of awe of life.

Methods: In this cross-sectional study, a total of 1,163 early adolescents ($M_{age} = 11.28 \pm 0.80$ years) completed self-report measures: the Parental Psychological Control Scale, Peer Rejection Scale, Aggressive Behavior Scale, and Awe of Life Scale. A moderated mediation model was tested to examine the mechanisms underlying the association between parental psychological control and negative emotions.

Results: (1) Parental psychological control was significantly positively correlated with peer rejection, aggressive behavior, and negative emotions. (2) Parental psychological control showed a direct positive association with negative emotions ($\beta = 0.179, p < 0.001$), accounting for 31.57% of the total association. (3) Parental psychological control was associated with negative emotions through the serial mediation of peer rejection and aggressive behavior. The mediating pathways via peer rejection ($\beta = 0.144, p < 0.001$), aggressive behavior ($\beta = 0.124, p < 0.001$), and the serial mediation pathway ($\beta = 0.120, p < 0.001$) accounted for 25.40%, 21.87%, and 21.16% of the total association, respectively. (4) Awe of life significantly moderated only the direct association, with this association being more pronounced under low levels of awe.

Discussion: The chained accumulation of family, peer, and individual risk factors constitutes a core mechanism underlying negative emotions, with parental psychological control emerging as the primary influencing factor. Awe of life, meanwhile, provides buffering protection by moderating the direct pathway. Systemic disruption of this risk accumulation process can be achieved by reducing parental psychological control, improving peer relationships, and cultivating awe of life. These insights offer actionable strategies for families and educators to design targeted interventions aimed at enhancing mental health in early adolescence.

KEYWORDS

parental psychological control, peer rejection, aggressive behavior, awe of life, preadolescence

1 Introduction

According to World Health Organization (WHO) estimates, approximately 50% of mental health conditions first emerge during adolescence. A meta-analysis of 191 global studies (total $N = 1,389,447$) reported pooled prevalence rates of 31% for depressive symptoms, 31% for anxiety symptoms, and 42% for sleep disturbances among children and adolescents (Deng et al., 2023). Tang et al. (2020) conducted an online survey of 4,342 primary and secondary school students in Shanghai, China, reporting prevalence rates of 19.7% for depression, 24.9% for anxiety, and 15.2% for stress. Collectively, these findings indicate a deterioration in adolescent mental health that is now recognized as a global crisis (Lawrance, 2024), alongside a discernible trend toward earlier onset ages (Chen, 2023; Hu et al., 2024). Henry and Crawford (2005) demonstrated that depression, anxiety, and stress constitute the core measurable dimensions of general psychological distress, with their integrated measurement showing robust validity. Building on this framework, the present study consolidates these three dimensions into the “negative emotions” construct, which serves as an operational metric for mental health assessment.

However, current research on adolescent mental health predominantly focuses on middle and high school students (Roulston et al., 2025; Pecora et al., 2025; Karhina et al., 2023), while largely overlooking upper elementary school students—a critical developmental transition period. The mismatch between rapid biopsychosocial changes (Blakemore et al., 2010; Dehestani et al., 2023) and insufficient cognitive-emotional preparedness (Niu et al., 2023) heightens vulnerability to psychological distress. Consequently, enhancing research on negative emotions in this cohort not only facilitates early identification of emerging emotional disturbances, but also significantly advances our understanding of the continuity of emotional development throughout adolescence.

Parenting styles significantly influence children’s internalizing and externalizing symptoms (Lorence et al., 2019). Parental psychological control refers to intrusive strategies that manipulate children’s emotions, cognitions, and self-worth to regulate behavior (Barber and Harmon, 2002). These strategies include guilt induction, love withdrawal, and ignoring children’s needs. Self-Determination Theory (Deci and Ryan, 2000) points that autonomy, competence and relatedness are innate basic psychological needs in humans. By ignoring children’s emotional and psychological needs, parental psychological control undermines the formation and development of their autonomy (Chyung et al., 2021). Extensive empirical research consistently demonstrates that higher levels of parental psychological control predicts multiple internalizing problems in adolescents, including anxiety, depression, loneliness, and social withdrawal (Falcone et al., 2024; Chyung et al., 2021; Piquart, 2017; Lee et al., 2015; Barber and Harmon, 2002; Yap and Jorm, 2015).

Social Learning Theory (Bandura, 1977) points out that individuals acquire new behaviors and skills through observing and imitating others. Parental rearing practices significantly shape children’s behavioral development (Grusec, 2011). Children chronically exposed to parental psychological control internalize

this pattern and apply it to their interpersonal interactions, subtly coercing their peers into meeting their demands (Chen and Cheng, 2019), including social exclusion, attention withdrawal, and instrumental friendship manipulation (Crick and Grotpeter, 1995). These behaviors contribute to strained peer relationships and may elicit peer rejection.

Peer rejection is defined as active dislike by peers, which is typically hurtful (Beeson et al., 2020; Gifford-Smith and Brownell, 2003). Adolescents actively form their identities, decreasing parental dependence and increasingly seeking support from their peers (Roach, 2018). Peer support is a protective factor against suicide, depression, anxiety, and stress in adolescents, and is positively associated with mental health, self-esteem, and optimism. In fact, peer rejection frequently occurs. When adolescents experience peer rejection, they exhibit emotional distress (Masten et al., 2009) and develop a range of internalizing and externalizing problems (Loparo et al., 2023), including anxiety, loneliness, social withdrawal, depression, anger, hostility, and aggression (Beeson et al., 2020; Zimmer-Gembeck et al., 2009; Dodge et al., 2003), with such effects demonstrating enduring persistence (Ha et al., 2019).

Cui et al. (2014) pointed out that parental psychological control significantly predicts aggressive behavior, including relational and physical aggression (Nelson et al., 2013). Kuppens et al. (2009) found that parental psychological control was positively correlated with relational aggression in children aged 8–10 years. Longitudinal studies confirm that parental psychological control heightens aggressive behavior over time, which in turn is strongly associated with depression (Zhang and Zhang, 2023) and anxiety (Chung et al., 2019).

Peer relationships shape the development of children’s behavioral tendencies (e.g., aggression, social withdrawal) (Coie et al., 1992; Gazelle and Ladd, 2003), with adverse peer relationships significantly predicting adolescent problem behaviors (Hinnant et al., 2015; Zhu et al., 2017). Yue and Zhang (2023) verified that peer rejection exacerbates adolescents’ aggression and rule-breaking behaviors (Janssens et al., 2017). Longitudinal studies further reveal that peer rejection during elementary school predicts externalizing behaviors including physical aggression and delinquency in middle school (Laird et al., 2001).

Awe is a complex emotional experience that arises when individuals encounter phenomena that transcend their existing cognitive frameworks (Liao et al., 2024; Keltner and Haidt, 2003). As a positive social emotion (Lin et al., 2025), awe enhances social functioning (Stellar et al., 2017), fosters positive mindsets (Stellar et al., 2018), and cultivates an optimistic life attitude (Yuan et al., 2024). Awe of life refers to an individual’s reverential emotions and attitudes toward life, stemming from perceptions of life’s miracles, power, fragility, and mortality, thereby evoking a sense of both profound respect and trepidation (Lin et al., 2024). Awe of life has been shown to enhance individuals’ quality of life and mitigate negative emotions (Sun et al., 2023). However, research indicates that approximately 22.3% of Chinese adolescents reported suicidal thoughts during the past 12 months (Luo et al., 2022). Leveraging the moderating role of awe of life in mitigating negative emotions holds significant implications for strengthening life education and promoting mental health among adolescents.

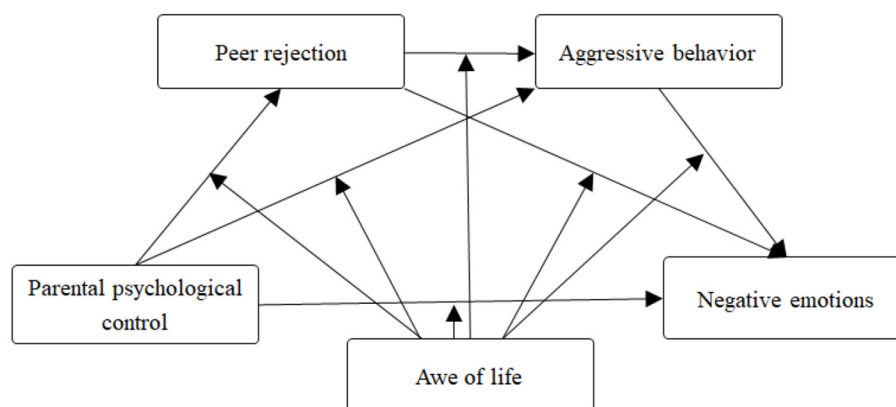


FIGURE 1

The hypothesized research model. Awe of life functions as a moderator across all pathways in the serial mediation model.

1.1 The present study

Despite extensive research on parental psychological control, peer relationships, aggressive behavior, and negative emotions as isolated domains, no study to date has comprehensively integrated family, peer, and individual behavioral factors into a unified framework to elucidate their systemic pathways underlying negative emotions. Guided by the Cumulative Risk Model (Evans et al., 2013) framework, this study examines the concurrent associations between multiple risk factors and negative emotions by quantifying their relative contributions, and further investigates the moderating role of awe of life, which provides both theoretical foundations and empirical evidence for alleviating emotional distress in early adolescents.

Based on the preceding analyses, this study proposes the following research hypotheses and theoretical model (Figure 1):

- H1: Peer rejection mediates the relationship between parental psychological control and negative emotions.
- H2: Aggressive behavior mediates the relationship between parental psychological control and negative emotions.
- H3: Peer rejection and aggressive behavior form a serial mediating pathway in the association between parental psychological control and negative emotions.
- H4: Awe of life moderates the association between parental psychological control and negative emotions.

2 Materials and methods

2.1 Participants and procedure

Using convenience sampling, our study recruited fifth and sixth graders from four elementary schools as participants in Anhui Province, China. Following administrative approval, class-wide sampling was implemented during information technology classes through standardized distribution of questionnaire links, with participants completing the assessments via computer terminals. Prior to data collection, informed consent was obtained from all participants and their guardians. Questionnaires were

collected anonymously, with all responses maintained under strict confidentiality protocols. Under standardized administration by trained instructors using uniform protocols, 1,218 questionnaires were collected. After excluding invalid cases due to either implausibly short response times or detectable response patterns, 1,163 valid responses were retained, yielding a validity rate of 95.48%. The final sample consisted of 640 males (55.03%) and 523 females (44.97%), including 459 fifth-grade students (39.47%) and 704 sixth-grade students (60.53%). Participants' average age was 11.28 ± 0.80 years ($M \pm SD$).

2.2 Measures

2.2.1 Parents psychological control

The Parental Psychological Control Scale, developed by Wang et al. (2007), consists of 18 items measuring three dimensions: guilt induction, love withdrawal, and authority assertion. Responses were recorded on a 5-point Likert scale (1 = not at all true; 5 = very true), with higher scores indicating greater levels of parental psychological control. The scale demonstrates good reliability and validity in Chinese adolescent populations (Li and Gu, 2023). In the current study, Cronbach's α coefficients were 0.93 for the full scale, 0.89 for guilt induction, 0.84 for love withdrawal, and 0.79 for authority assertion. The results of the confirmatory factor analysis supported the good structural validity of the scale, as evidenced by the following fit indices: $\chi^2/df = 2.866$, RMSEA = 0.046, CFI = 0.953, NFI = 0.947, IFI = 0.944.

2.2.2 Peer rejection

The Peer Rejection Scale, originally developed by Thau et al. (2015) and subsequently adapted by Xu and Niu (2019), was administered, comprising 6 items. Using a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree) where higher scores indicate greater peer rejection, this measure demonstrates good reliability and validity in Chinese adolescent populations (Dou et al., 2023), with a Cronbach's α of 0.93 in the current study. The results of the confirmatory factor analysis supported the good structural validity

of the scale, as evidenced by the following fit indices: $\chi^2/df = 2.248$, RMSEA = 0.052, CFI = 0.968, NFI = 0.954, IFI = 0.953.

2.2.3 Aggressive behavior

The Aggression Scale, originally developed by Buss and Perry (1992) and subsequently adapted and abbreviated by Liu et al. (2009), comprises 20 items measuring four dimensions: physical aggression, anger, hostility, and displaced aggression. Using a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree) with higher scores indicating greater aggression levels, this measure demonstrates good reliability and validity in Chinese adolescent populations (Zou et al., 2024). In the current study, Cronbach's α coefficients were 0.92 for the full scale, 0.74 for physical aggression, 0.75 for anger, 0.77 for hostility, and 0.76 for displaced aggression. The results of the confirmatory factor analysis supported the good structural validity of the scale, as evidenced by the following fit indices: $\chi^2/df = 3.194$, RMSEA = 0.041, CFI = 0.964, NFI = 0.961, IFI = 0.957.

2.2.4 Depression, anxiety and stress

The Depression Anxiety Stress Scales-21 (DASS-21), originally developed by Lovibond and Lovibond (1995) and culturally adapted by Wang et al. (2016), comprises 21 items measuring three dimensions (depression, anxiety and stress) with 7 items per subscale. Responses were recorded on a 4-point Likert scale (0 = did not apply to me at all; 3 = applied to me very much), with higher scores indicating more intense emotional experiences. The scale demonstrates good reliability and validity in Chinese adolescent populations (Chen et al., 2023), serving as an effective screening tool for general psychological distress. In the current study, Cronbach's α coefficients were 0.95 for the full scale, 0.87 for depression, 0.86 for anxiety, and 0.87 for stress. The results of the confirmatory factor analysis supported the good structural validity of the scale, as evidenced by the following fit indices: $\chi^2/df = 2.864$, RMSEA = 0.034, CFI = 0.969, NFI = 0.961, IFI = 0.953.

2.2.5 Awe of life

The Adolescent Awe of Life Scale developed by Lin et al. (2024), consists of 12 items assessing three dimensions: respect for life, fear of death, and transcendence of meaning of life. Responses were recorded on a 6-point Likert scale (1 = strongly disagree; 6 = strongly agree) with higher scores indicating greater levels of awe of life. The scale demonstrates good reliability and validity in Chinese adolescent populations, with Cronbach's α coefficients of 0.82 for the full scale, 0.83 for respect for life, 0.78 for fear of death, and 0.79 for transcendence of meaning of life. The results of the confirmatory factor analysis supported the good structural validity of the scale, as evidenced by the following fit indices: $\chi^2/df = 4.016$, RMSEA = 0.065, CFI = 0.923, NFI = 0.917, IFI = 0.905.

2.3 Data analysis

Statistical analyses were conducted using SPSS 26.0, including descriptive statistics and Pearson correlation analyses. Conduct

confirmatory factor analysis (CFA) on the scales using Amos 24.0. Based on correlational findings and theoretical hypotheses, linear regression modeling was employed to examine the relationship between parental psychological control and negative emotions. Data analyses were performed using Hayes' PROCESS macro (v4.1) in SPSS. Model 6 was employed to assess the serial mediating pathways linking parental psychological control to negative emotions through peer rejection and aggressive behavior, while Model 92 tested the moderating role of awe of life. Statistical significance was assessed via the bias-corrected percentile bootstrap approach with 95% confidence intervals (5,000 resamples), with associations deemed significant if the interval excluded zero.

3 Results

3.1 Common method bias testing

Common method bias was assessed through Harman's single-factor test by conducting an unrotated exploratory factor analysis, which yielded 11 factors with eigenvalues > 1, where the first factor accounted for 32.33% of the variance, below the 40% threshold (Podsakoff et al., 2003). Thus, common method bias in this study falls within acceptable levels.

3.2 Descriptive analysis

Pearson correlation analyses (Table 1) revealed significant positive associations among parental psychological control, peer rejection, aggressive behavior, and negative emotions ($r = 0.489 \sim 0.738$, all $ps < 0.01$). Awe of life showed significant negative correlations with parental psychological control, peer rejection, aggressive behavior, and negative emotions ($r = -0.320 \sim -0.169$, all $ps < 0.01$). These results provide preliminary support for testing mediation pathways. Additionally, given the significant positive associations between (a) gender and peer rejection, and (b) age and aggressive behavior, both variables were included as covariates in subsequent analyses.

3.3 Mediation model testing

Mediation analyses were performed using Model 6 of the PROCESS macro (v4.1) in SPSS to examine the intermediary mechanisms between parental psychological control and negative emotions (Table 2). Multiple regression analyses indicated a significant main association between parental psychological control and negative emotions ($\beta = 0.567$, $p < 0.001$). After incorporating the mediators (peer rejection and aggressive behavior), the direct association substantially weakened but remained significant ($\beta = 0.179$, $p < 0.001$).

Bias-corrected percentile bootstrap analyses revealed significant indirect associations for all pathways, with 95% confidence intervals excluding zero (Table 3). Peer rejection and aggressive behavior serve as serial mediators in the association between parental psychological control and negative emotions. Additional analyses confirmed the significance of Indirect Path 1

TABLE 1 Participants' characteristics and correlation matrix.

Variables	1	2	3	4	5	6	M	SD
1. Gender	-						1.45	0.50
2. Age	−0.030	-					11.28	0.80
3. Parents psychological control	−0.025	0.026	-				43.75	16.43
4. Peer rejection	0.091**	0.028	0.498**	-			12.24	6.43
5. Aggressive behavior	0.015	0.076**	0.551**	0.680**	-		45.52	16.01
6. Awe of life	−0.065*	−0.071*	−0.169**	−0.246**	−0.239**	-	51.16	11.15
7. Negative emotions	0.056	0.042	0.566**	0.680**	0.738**	−0.320**	18.33	14.54

Gender: male = 1, female = 2; *p < 0.05, **p < 0.01.

TABLE 2 Testing the serial mediation model.

Model	DV	IV	β	t	R^2	F
1	NE	Gender	0.071	2.934**	0.326	186.629***
		Age	0.030	1.229		
		PPC	0.567	23.477***		
2	PR	Gender	0.104	4.108***	0.259	131.190***
		Age	0.018	0.699		
		PPC	0.500	19.777***		
3	AB	Gender	−0.026	−1.254	0.525	320.611***
		Age	0.053	2.615**		
		PPC	0.280	11.942***		
		PR	0.541	23.003***		
4	NE	Gender	0.027	1.504	0.625	386.024***
		Age	−0.003	−0.175		
		PPC	0.179	8.092***		
		PR	0.288	11.405***		
		AB	0.443	16.964***		

All variables were standardized before being entered into the model. DV = dependent variable; IV = independent variable; PPC = parental psychological control; PR = peer rejection; AB = aggressive behavior; NE = negative emotions. Model 1 represents the total association between PPC and NE; Model 2 examines the association of PPC with PR; Model 3 assesses the associations of both PPC and PR with AB; Model 4 tests the associations among PPC, PR, AB and NE. **p < 0.01, ***p < 0.001.

(parental psychological control → peer rejection → negative emotions: $\beta = 0.144$, 95% CI (0.108, 0.183), which supported H1 and explained 25.40% of the total association. Indirect Path 2 (parental psychological control → aggressive behavior → negative emotions: $\beta = 0.124$, 95% CI (0.092, 0.159) was significant, supporting H2 and explaining 21.87% of the total association. Indirect Path 3 (parental psychological control → peer rejection → aggressive behavior → negative emotions: $\beta = 0.120$, 95% CI (0.096, 0.146) demonstrated significant serial mediation, supporting H3 and explaining 21.16% of the total association.

The direct and indirect associations accounted for 31.57% and 68.43% of the total association, respectively, indicating that indirect pathways exerted over twice the magnitude of direct associations in the link between parental psychological control and negative emotions, and peer rejection showed a particularly strong association.

TABLE 3 Decomposition of total, direct and indirect associations.

Paths	Values	Boot SE	95% CI	Ratio
1. PPC → PR → NE	0.144	0.019	(0.108, 0.183)	25.40%
2. PPC → AB → NE	0.124	0.017	(0.092, 0.159)	21.87%
3. PPC → PR → AB → NE	0.120	0.012	(0.096, 0.146)	21.16%
Total indirect association	0.388	0.023	(0.346, 0.430)	68.43%
Direct association	0.179	0.022	(0.135, 0.222)	31.57%
Total association	0.567	0.024	(0.519, 0.614)	

PPC = parental psychological control; PR = peer rejection; AB = aggressive behavior; NE = negative emotions.

3.4 Moderated model testing

The direct association between parental psychological control and negative emotions was significant, supporting the establishment of a moderated serial mediation model (Igartua and Hayes, 2021). To examine the moderation of awe of life, we conducted analyses using Model 92 of the PROCESS macro (v4.1) in SPSS. The interaction term between parental psychological control and awe of life showed a significant association with negative emotions ($\beta = -0.060$, $t = -2.988$, $p < 0.01$). In contrast, no other interaction terms involving awe of life reached statistical significance (Table 4). These results demonstrate that awe of life significantly moderated the direct association between parental psychological control and negative emotions, whereas its moderating influences on all indirect pathways were nonsignificant (Figure 2), providing partial support for H4.

Further analysis shows that the association between parental psychological control and negative emotions was significantly moderated by awe of life across all three tested levels, with association strengths demonstrating a decreasing trend, indicating a buffering role of awe of life in this association. Simple slope analyses (Figure 3) revealed that stronger associations between parental psychological control and negative emotions under low awe of life (M-1SD), whereas high levels (M + 1SD) effectively buffered this adverse influence (Table 5).

4 Discussion

Grounded in the Ecological Systems Theory (Bronfenbrenner, 1977) and Cumulative Risk Model (Evans et al., 2013), this study integrates microsystem-level family factors, peer factors,

and individual behaviors to examine their collective associations with negative emotions. The results demonstrated that parental psychological control is directly associated with negative emotions, while also exerting influence through both the independent mediation of peer rejection and aggressive behavior, as well as their serial mediation pathway. The awe of life exerts a significant moderation on the direct pathway, attenuating the link between parental psychological control and negative emotions.

TABLE 4 Testing the moderated mediation association.

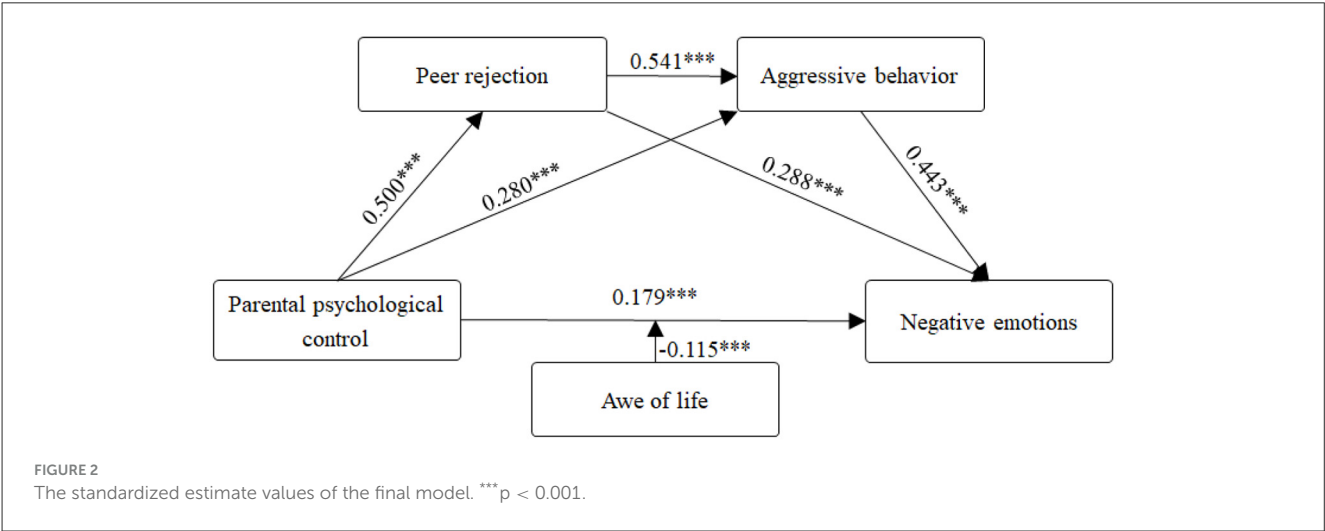
DV	IV	β	t	R^2	F
PR	Gender	0.182	3.614***	0.285	92.086***
	Age	0.010	0.304		
	PPC	0.470	18.491***		
	AF	−0.155	−6.014***		
	PPC×AF	−0.026	−1.190		
AB	Gender	−0.054	−1.319	0.530	185.978***
	Age	0.063	2.466*		
	PPC	0.276	11.741***		
	PR	0.527	22.054***		
	AF	−0.057	−2.671**		
	PPC×AF	0.020	0.922		
	PR×AF	−0.032	−1.511		
NE	Gender	0.034	0.950	0.642	229.499***
	Age	−0.011	−0.512		
	PPC	0.169	7.798***		
	PR	0.269	10.823***		
	AB	0.430	16.716***		
	AF	−0.115	−6.098***		
	PPC×AF	−0.060	−2.988**		
	PR×AF	0.002	0.091		
	AB×AF	0.020	0.812		

DV = dependent variable; IV = independent variable; PPC = parental psychological control; PR = peer rejection; AB = aggressive behavior; AF = awe of life; NE = negative emotions; *p < 0.05, **p < 0.01, ***p < 0.001.

4.1 The mediating role of peer rejection and aggressive behavior

The total association between parental psychological control and negative emotions is 0.567, with a mediating value of 0.388, accounting for 68.43% of the total association, demonstrating significant implications for the mental health in early adolescence. Erikson (1968) theory of psychosocial development identifies adolescence as a critical period for ego identity formation. Parental psychological control, defined as an intrusive parenting behavior that compromises emotional autonomy (Steinberg et al., 1992), has been shown to significantly impair the development of psychological autonomy and identity consolidation (Barber and Harmon, 2002). This parenting approach diminishes children’s perceived control and internal locus of control, undermines their emotional functioning (Wang et al., 2007), fosters helplessness development, and ultimately leads to internalizing problems. These associations collectively contribute to internalizing problems (Chyung et al., 2021; Garber and Flynn, 2001), including elevated negative emotions, which aligns with prior findings (Loparo et al., 2023; Lee et al., 2015).

Additionally, peer relationships play an extremely important role in early adolescence. According to Ecological Systems Theory (Bronfenbrenner, 1977), family and peers, as two crucial subsystems influencing adolescent development, do not evolve independently but are interrelated, whereby risk factors in one subsystem heighten vulnerability to risk factors in the other (Hong et al., 2022).



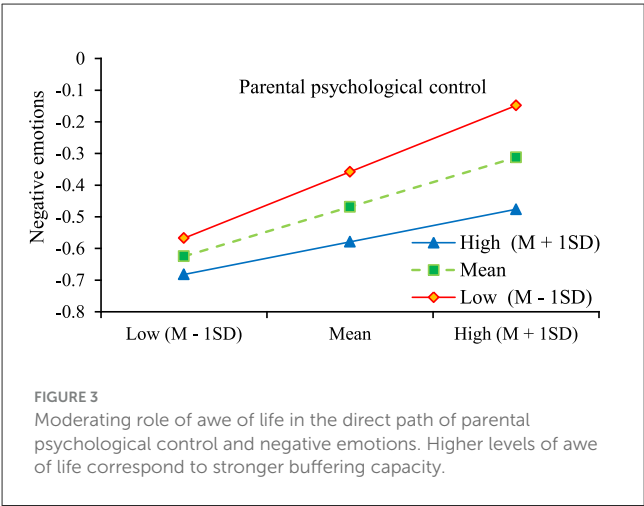


TABLE 5 Indirect values at different levels of awe of life.

Level	Values	SE	t	95% CI
M-1SD	0.229	0.028	8.052***	(0.173, 0.285)
M	0.169	0.022	7.798***	(0.127, 0.212)
M+1SD	0.110	0.031	3.589***	(0.050, 0.169)

***p < 0.001. The moderating roles demonstrate statistical significance across all three tested levels.

Children exposed to high levels of parental psychological control tend to develop maladaptive interpersonal strategies, leading to peer rejection (Hong et al., 2022), which in turn elevates the risk of anxiety and depression (Li and Jiang, 2018; Wang et al., 2019; Zhang et al., 2018). Although some studies posit peer rejection as a consequence rather than a cause of internalizing symptoms (Vaillancourt et al., 2013), the current study supports the temporal precedence of peer rejection over the development of internalizing symptoms (Healy et al., 2024).

According to the Temporal Need-Threat Model (Williams, 2009), thwarted needs drive individuals to enact specific behaviors directed toward need satisfaction or compensation, with aggressive behavior constituting a prevalent response pattern. Excluded individuals resort to aggression to regain relational control or dominance, thereby compensating for impaired fundamental needs (Reiter-Scheidt et al., 2018). This finding substantiates and reinforces previous research demonstrating that peer-rejected children may develop heightened hostile intent, consequently eliciting aggressive behaviors (Dodge et al., 2003; Reijntjes et al., 2011).

Our study reveals a serial mediation pathway wherein parental psychological control influences aggressive behavior through peer rejection, confirming the “risk cascade” hypothesis of Cumulative Risk Models. Specifically, parental psychological control not only directly erodes adolescent autonomy (Self-Determination Theory; Deci and Ryan, 2000), but also through social learning mechanisms (Bandura, 1977), facilitates the acquisition of coercive interpersonal strategies (e.g., emotional manipulation), leading to peer rejection. Such rejection then jeopardizes fundamental belongingness needs (Need-Threat Model; Williams, 2009), which

predisposes individuals to aggressive behaviors as compensatory mechanisms (e.g., reestablishing perceived control via aggression), thereby establishing a cumulative risk sequence of “control → rejection → aggression → emotional dysregulation”. These findings corroborate Evans et al. (2013) proposition of “Nonlinear Additive Effects of Multiple Risk Factors”, illustrating how familial, peer, and behavioral risk factors exacerbate mental health problems via progressive cascades. Among the three indirect pathways, peer rejection showed the strongest mediating role. This pattern aligns with developmental research indicating heightened sensitivity to peer relationships during early adolescence, when needs for group belongingness and friendship become particularly pronounced (Beeson et al., 2020).

4.2 The moderating role of awe of life

Partially supporting H4, awe of life significantly moderated the direct path from parental psychological control to negative emotions, but not the indirect paths.

The moderating role indicates that awe of life buffers the direct association between parental psychological control and negative emotions. Individuals with high levels of awe of life exhibit significantly lower negative emotions when exposed to psychological control, whereas those with low awe of life demonstrate heightened vulnerability to its adverse associations.

Emotion Regulation Theory posits that emotions result from the operations of valuation systems (Gross, 2015). In the direct path, awe of life functions as a “second-level” valuation system, assessing and modulating the “first-level” valuation system that generates negative emotions. Since awe of life prompts individuals to reexamine the events causing negative emotions from a broader, more macroscopic perspective of life (Monroy and Keltner, 2023), it facilitates adjustment of the cognition and evaluation of these events. On the one hand, when encountering negative emotion-eliciting situations, awe of life directs attention to life’s profound value and beauty, enabling individuals to extract positive significance from adversity (Liao et al., 2024). The process of meaning-making promotes cognitive reappraisal, effectively downregulating negative emotions. On the other hand, awe motivates the adoption of proactive emotional goals, predisposing individuals to prioritize positive emotional experiences. Through this dual pathway, awe weakens the association with negative emotions while concurrently enhancing subjective wellbeing and life satisfaction (Jin, 2021).

The indirect pathway, encompassing peer and individual behavioral factors, involves complex emotion-related processes wherein the moderating role of awe of life may be obscured or attenuated by other mediating variables, thereby resulting in non-significant moderation.

4.3 Implications and limitations

The findings provide valuable insights for contemporary family education and school education practices in China.

Despite China's implementation of the three-child policy, the declining birth rate remains an indisputable fact. Smaller family size elevates parental expectations for children (Milovanska-Farrington, 2022), heightening parental anxiety. This heightened anxiety may trigger unconscious exertion of psychological control when children exhibit behavioral deviations. Furthermore, traditional Chinese Confucian culture emphasizes parental authority and filial piety, where strong control is often interpreted as an expression of parental love (Li et al., 2025). In collectivist cultural contexts, parents perceive their children as extensions of their own self-worth. To enhance parental status and image, they may therefore unconsciously intensify control over their children, with the aim of motivating children toward higher achievements. However, intensive psychological control may trigger cumulative negative emotions and heighten vulnerability to suicidal ideation and behaviors (Breslin et al., 2020), ultimately undermining healthy child development (Ma and Zhang, 2022).

As Grolnick (2003) noted, "Well-meaning parenting backfires". Parents should provide greater support for children's autonomy and initiative (Lee et al., 2015), maintain openness to unpredictability (Wolbert et al., 2018), and ensure students feel genuinely respected, an approach that fosters holistic psychological and physical development.

Schools should acknowledge the significant relevance of peer rejection and aggressive behaviors to adolescent mental health while leveraging their unique resource advantages to foster psychological wellbeing (Yu et al., 2022). Specifically, in the context of the "Double Reduction" policy, educational institutions should design innovative curricula targeting social-emotional competencies and stress management techniques, systematically integrating social skills training into core education to better mitigate peer rejection. Concurrently, teachers should monitor students' emotional and behavioral patterns, developing specialized competence in early identification of mental health risks (O'Farrell et al., 2022). Furthermore, implementing physical activities and group experiential programs while strengthening life education enhances students' awe of life, effectively mitigating emotional problems and improving psychological wellbeing (Tu, 2020; Moeijes et al., 2018).

This study has several limitations. First, although gender and age were controlled for in the current study, potential confounding factors such as household income and parental education level were not included, which may compromise the ecological validity of the findings. Future research should incorporate multilevel data to verify the model's generalizability. Second, this study employed self-report questionnaires, with data collected solely from students' subjective reports. This approach may introduce issues such as common method bias and social desirability bias. Future research should integrate behavioral observations, physiological indicators (e.g., heart rate, skin conductance response), and multi-informant reports (e.g., from teachers, peers, parents) to further elucidate the mechanisms underlying adolescents' negative emotions. Third, the cross-sectional design with samples drawn exclusively from four elementary schools in Anhui Province precludes causal inferences. Future investigations should employ longitudinal or experimental designs to conduct cross-regional and cross-cultural studies, thereby enhancing the generalizability of findings.

5 Conclusion

This study investigated the association between parental psychological control and negative emotions, clarifying the underlying mechanisms by examining the mediating roles of peer rejection and aggressive behaviors, as well as the moderating role of awe of life. This study reveals a risk-cascade mechanism of "parental control → peer rejection → aggressive behavior" and the buffering protective role of awe of life. It establishes the first multi-risk-protection model tailored to Chinese early adolescents, closing a critical gap in developmental research on this age period and providing precise intervention targets for the early prevention of adolescent emotional problems. Our study highlights that reducing parental psychological control, promoting healthy peer relationships, and nurturing children's awe of life have significant implications for predicting and preventing mental health risks among early adolescents.

Data availability statement

The original contributions presented in the study are included in the article/Supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

MZ: Investigation, Funding acquisition, Writing – review & editing, Conceptualization, Software, Supervision, Writing – original draft, Resources, Validation, Project administration, Data curation, Methodology, Visualization, Formal analysis. TT: Formal analysis, Project administration, Supervision, Data curation, Methodology, Software, Writing – review & editing, Conceptualization, Validation.

Funding

The author(s) declare that financial support was received for the research and/or publication of this article. This research was funded by Research on Promoting Mental Health and Enhancing Work Efficiency of Logistics Personnel (HX2024082).

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpsyg.2025.1618832/full#supplementary-material>

References

- Bandura, A. (1977). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice Hall.
- Barber, B. K., and Harmon, E. L. (2002). "Violating the self: parental psychological control of children and adolescents," in *Intrusive Parenting: How Psychological Control Affects Children And Adolescents*, ed. B. K. Barber (Washington, DC: American Psychological Association), 15–52. doi: 10.1037/10422-002
- Beeson, C. M. L., Brittain, H., and Vaillancourt, T. (2020). The temporal precedence of peer rejection, rejection sensitivity, depression, and aggression across adolescence. *Child Psychiatry Hum. Dev.* 5, 781–791. doi: 10.1007/s10578-020-01008-2
- Blakemore, S. J., Burnett, S., and Dahl, R. E. (2010). The role of puberty in the developing adolescent brain. *Hum. Brain Mapp.* 6, 926–933. doi: 10.1002/hbm.21052
- Breslin, K., Balaban, J., and Shubkin, C. D. (2020). Adolescent suicide: what can pediatricians do? *Curr. Opin. Pediatr.* 4, 595–600. doi: 10.1097/MOP.0000000000000916
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *Am. Psychol.* 7, 513–531. doi: 10.1037/0003-066X.32.7.513
- Buss, A. H., and Perry, M. (1992). The aggression questionnaire. *J. Pers. Soc. Psychol.* 3, 452–459. doi: 10.1037/0022-3514.63.3.452
- Chen, H., and Cheng, C. (2019). Parental psychological control and children's relational aggression: examining the roles of gender and normative beliefs about relational aggression. *J. Psychol.* 2, 159–175. doi: 10.1080/00223980.2019.1689904
- Chen, I., Chen, C., Liao, X., Chen, X., Zheng, X., Tsai, Y., et al. (2023). Psychometric properties of the Depression, Anxiety, and Stress Scale (DASS-21) among different Chinese populations: a cross-sectional and longitudinal analysis. *Acta Psychol.* 240:104042. doi: 10.1016/j.actpsy.2023.104042
- Chen, X. (2023). Research on the intervention methods of adolescents' non-suicidal self-injury behavior. *Lect. Notes Educ. Psychol. Public Media* 6, 465–471. doi: 10.54254/2753-7048/6/20220436
- Chung, J. E., Song, G., Kim, K., Yee, J., Kim, J. H., Lee, K. E., et al. (2019). Association between anxiety and aggression in adolescents: a cross-sectional study. *BMC Pediatr.* 19:115. doi: 10.1186/s12887-019-1479-6
- Chyung, Y. J., Lee, Y. A., Ahn, S. J., and Bang, H. S. (2021). Associations of perceived parental psychological control with depression, anxiety in children and adolescents: a meta-analysis. *Marriage Fam. Rev.* 2, 158–197. doi: 10.1080/01494929.2021.1941496
- Coie, J. D., Lochman, J. E., Terry, R., and Hyman, C. (1992). Predicting early adolescent disorder from childhood aggression and peer rejection. *J. Consult. Clin. Psychol.* 5, 783–792. doi: 10.1037/0022-006X.60.5.783
- Crick, N. R., and Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. *Child Dev.* 3, 710–722. doi: 10.2307/1131945
- Cui, L., Morris, A. S., Criss, M. M., Houlberg, B. J., and Silk, J. S. (2014). Parental psychological control and adolescent adjustment: the role of adolescent emotion regulation. *Parent. Sci. Pract.* 14, 47–67. doi: 10.1080/15295192.2014.880018
- Deci, E. L., and Ryan, R. M. (2000). The "what" and "why" of goal pursuits: human needs and the self-determination of behavior. *Psychol. Inq.* 11, 227–268. doi: 10.1207/S15327965PLI1104_01
- Dehestani, N., Whittle, S., Vijayakumar, N., and Silk, T. J. (2023). Developmental brain changes during puberty and associations with mental health problems. *Dev. Cogn. Neurosci.* 60:101227. doi: 10.1016/j.dcn.2023.101227
- Deng, J., Zhou, F., Hou, W., Heybati, K., Lohit, S., Abbas, U., et al. (2023). Prevalence of mental health symptoms in children and adolescents during the COVID-19 pandemic: a meta-analysis. *Ann. N. Y. Acad. Sci.* 1520, 53–73. doi: 10.1111/nyas.14947
- Dodge, K. A., Lansford, J. E., Burks, V. S., Bates, J. E., Pettit, G. S., Fontaine, R., et al. (2003). Peer rejection and social information-processing factors in the development of aggressive behavior problems in children. *Child Dev.* 74, 374–393. doi: 10.1111/1467-8624.7402004
- Dou, K., Li, Y., Wang, L., and Nie, Y. (2023). Fear of missing out or social avoidance? The relationship between peer exclusion and problematic social media use among adolescents. *J. Psychol. Sci.* 5, 1081–1089. doi: 10.16719/j.cnki.1671-6981.20230507
- Erikson, E. H. (1968). *Identity: Youth and Crisis*. New York, NY: W. W. Norton & Company.
- Evans, G. W., Li, D., and Whipple, S. S. (2013). Cumulative risk and child development. *Psychol. Bull.* 6, 1342–1396. doi: 10.1037/a0031808
- Falcone, M. M., Rey, Y., Chong, L. J., Marin, C. E., Lebowitz, E. R., Silverman, W. K., et al. (2024). Parent psychological control and youth social anxiety: examining attention control and its components as moderators. *Cognit. Ther. Res.* 49, 376–384. doi: 10.1007/s10608-024-10538-1
- Garber, J., and Flynn, C. (2001). "Vulnerability to depression in childhood and adolescence," in *Vulnerability to Psychopathology: Risk Across the Lifespan*, eds. R. E. Ingram and J. M. Price (New York, NY: Guilford Press), 175–225.
- Gazelle, H., and Ladd, G. W. (2003). Anxious solitude and peer exclusion: a diathesis-stress model of internalizing trajectories in childhood. *Child Dev.* 74, 257–278. doi: 10.1111/1467-8624.00534
- Gifford-Smith, M. E., and Brownell, C. A. (2003). Childhood peer relationships: social acceptance, friendships, and peer networks. *J. Sch. Psychol.* 4, 235–284. doi: 10.1016/S0022-4405(03)00048-7
- Grolnick, W. S. (2003). *The Psychology of Parental Control: How Well-Meant Parenting Backfires*. Mahwah, NJ: Psychology Press.
- Gross, J. J. (2015). The extended process model of emotion regulation: elaborations, applications, and future directions. *Psychol. Inq.* 26, 130–137. doi: 10.1080/1047840X.2015.989751
- Grusec, J. E. (2011). Socialization processes in the family: social and emotional development. *Annu. Rev. Psychol.* 62, 243–269. doi: 10.1146/annurev.psych.121208.131650
- Ha, T., van Roekel, E., Iida, M., and Dishion, T. J. (2019). Depressive symptoms amplify emotional reactivity to daily perceptions of peer rejection in adolescence. *J. Youth Adolesc.* 11, 2152–2164. doi: 10.1007/s10964-019-01146-4
- Healy, K. L., Scott, J. G., and Thomas, H. J. (2024). The protective role of supportive relationships in mitigating bullying victimization and psychological distress in adolescents. *J. Child Fam. Stud.* 33, 3211–3228. doi: 10.1007/s10826-024-02891-2
- Henry, J. D., and Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress scales (DASS-21): construct validity and normative data in a large non-clinical sample. *Br. J. Clin. Psychol.* 44, 227–239. doi: 10.1348/014466505X29657
- Hinnant, J. B., Erath, S. A., Tu, K. M., and El-Sheikh, M. (2015). Permissive parenting, deviant peer affiliations, and delinquent behavior in adolescence: the moderating role of sympathetic nervous system reactivity. *J. Abnorm. Child Psychol.* 44, 1071–1081. doi: 10.1007/s10802-015-0114-8
- Hong, X., Liu, S., Fan, H., Xie, H., Fang, S., and Zhang, L. (2022). Effects of economic regional differences and family on adolescents' aggressive behaviors: perspective of ecosystem integration. *Brain Behav.* 13: e2856. doi: 10.1002/brb3.2856
- Hu, W., Yu, Z., Liang, X., Zhang, Y., Wang, W., and Li, Y. (2024). The current situation of depression and anxiety of primary and middle school students compared between pre- and post- "Double Reduction" policy in Urumqi. *J. Int. Psychiatr.* 2, 422–425, 429.
- Igartua, J. J., and Hayes, A. F. (2021). Mediation, moderation, and conditional process analysis: concepts, computations, and some common confusions. *Span. J. Psychol.* 24:e49. doi: 10.1017/SJP.2021.46
- Janssens, A., Noortgate, W. V. D., Goossens, L., Verschueren, K., Colpin, H., Claes, S., et al. (2017). Adolescent externalizing behaviour, psychological control, and peer

- rejection: transactional links and dopaminergic moderation. *Br. J. Dev. Psychol.* 3, 420–438. doi: 10.1111/bjdp.12184
- Jin, X. (2021). *The effect of awe on meaning in life* (Doctoral dissertation). Shanxi Normal University, Shanxi, China. doi: 10.27287/d.cnki.gsxsu.2021.000364
- Karhina, K., Bøe, T., Hysing, M., and Kleftaras, G. (2023). Parental separation, negative life events and mental health problems in adolescence. *BMC Public Health* 23:2364. doi: 10.1186/s12889-023-17307-x
- Keltner, D., and Haidt, J. (2003). Approaching awe, a moral, spiritual, and aesthetic emotion. *Cogn. Emot.* 17, 297–314. doi: 10.1080/026999303022297
- Kuppens, S., Grietens, H., Onghena, P., and Michiels, D. (2009). Associations between parental control and children's overt and relational aggression. *Br. J. Dev. Psychol.* 27, 607–623. doi: 10.1348/026151008X345591
- Laird, R. D., Jordan, K. Y., Dodge, K. A., Pettit, G. S., and Bates, J. E. (2001). Peer rejection in childhood, involvement with antisocial peers in early adolescence, and the development of externalizing behavior problems. *Dev. Psychopathol.* 13, 337–354. doi: 10.1017/S0954579401002085
- Lawrance, E. L. (2024). Crises impact youth mental health. *Nat. Clim. Chang.* 14, 1016–1017. doi: 10.1038/s41558-024-02144-6
- Lee, S., Lee, K., Yi, S., Park, H. J., Hong, Y., and Cho, H. (2015). Effects of parental psychological control on child's school life: mobile phone dependency as mediator. *J. Child Fam. Stud.* 25, 407–418. doi: 10.1007/s10826-015-0251-2
- Li, C., and Jiang, S. (2018). Social exclusion, sense of school belonging and mental health of migrant children in China: a structural equation modeling analysis. *Child. Youth Serv. Rev.* 89, 6–12. doi: 10.1016/j.childyouth.2018.04.017
- Li, T., and Gu, J. (2023). The relationship between parental psychological control and children's academic anxiety: the role of future orientation and parental academic involvement. *Stud. Psychol. Behav.* 21, 359–366. doi: 10.1016/j.childyouth.2020.105627
- Li, Y., Tang, Y., and Huang, Z. (2025). The effect of parenting styles on adolescents' empathic abilities: a comparative analysis based on SSES 2019. *J. Comp. Educ.* 355, 100–112.
- Liao, S., Liu, Y., and Yuan, B. (2024). The effects of awe on interpersonal forgiveness: the mediating role of small-self. *Front. Psychol.* 15:1336068. doi: 10.3389/fpsyg.2024.1336068
- Lin, R., Hu, T., Ye, Y., Chen, Y., Xie, H., He, X., et al. (2025). What the Junzi stands in awe of? The heterogeneity of Junzi personality and its relationship with awe by network analysis in Chinese undergraduates. *J. Psychol. Sci.* 1, 107–117. doi: 10.16719/j.cnki.1671-6981.20250111
- Lin, R., Shen, Y., Lin, K., Chen, Y., Xie, H., He, X., et al. (2024). Development and validation of the awe of life questionnaire in adolescents. *Chinese J. Clin. Psychol.* 3, 575–581.
- Liu, J., Zhou, Y., and Gu, W. (2009). Reliability and validity of Chinese version of Buss-Perry Aggression Questionnaire in adolescents. *Chinese J. Clin. Psychol.* 4, 449–451.
- Loparo, D., Fonseca, A. C., Matos, A. P., and Pereira, C. R. (2023). A developmental cascade analysis of peer rejection, depression, anxiety, and externalizing problems from childhood through young adulthood. *Res. Child Adolesc. Psychopathol.* 51, 1303–1314. doi: 10.1007/s10802-023-01053-0
- Lorence, B., Hidalgo, V., Pérez-Padilla, J., and Menéndez, S. (2019). The role of parenting styles on behavior problem profiles of adolescents. *Int. J. Environ. Res. Public Health.* 16:2767. doi: 10.3390/ijerph16152767
- Lovibond, P. F., and Lovibond, S. H. (1995). The structure of negative emotional states: comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behav. Res. Ther.* 3, 335–343. doi: 10.1016/0005-7967(94)00075-U
- Luo, X., Zheng, R., Xiao, P., Xie, X., Liu, Q., Zhu, K., et al. (2022). Relationship between school bullying and mental health status of adolescent students in China: a nationwide cross-sectional study. *Asian J. Psychiatr.* 70:103043. doi: 10.1016/j.ajp.2022.103043
- Ma, B., and Zhang, Y. (2022). Parents' high educational expectations and adolescents' mental health. *Youth Stud.* 5, 32–44, 94–95. https://d.wanfangdata.com.cn/periodical/qnyj202205003
- Masten, C. L., Eisenberger, N. I., Borofsky, L. A., Pfeifer, J. H., McNealy, K., Mazzotta, J. C., et al. (2009). Neural correlates of social exclusion during adolescence: Understanding the distress of peer rejection. *Soc. Cogn. Affect. Neurosci.* 4, 143–157. doi: 10.1093/scan/nsp007
- Milovanska-Farrington, S. (2022). Do parents expect too much or is it all about grades? The discrepancy between parents' aspirations and child's academic performance, and parental satisfaction with the school. *Cogent Educ.* 10:2079178. doi: 10.1080/23322039.2022.2079178
- Moeijes, J., van Busschbach, J. T., Bosscher, R. J., and Twisk, J. W. R. (2018). Sports participation and psychosocial health: a longitudinal observational study in children. *BMC Public Health.* 18:702. doi: 10.1186/s12889-018-5624-1
- Monroy, M., and Keltner, D. (2023). Awe as a pathway to mental and physical health. *Persp. Psychol. Sci.* 18, 309–320. doi: 10.1177/17456916221094856
- Nelson, D. A., Yang, C., Coyne, S. M., Olsen, J. A., and Hart, C. H. (2013). Parental psychological control dimensions: connections with Russian preschoolers' physical and relational aggression. *J. Appl. Dev. Psychol.* 34, 1–8. doi: 10.1016/j.appdev.2012.07.003
- Niu, L., Sheffield, P., and Li, Y. (2023). Pubertal timing, neighborhood income, and mental health in boys and girls: findings from the adolescent brain cognitive development study. *Soc. Sci. Med.* 334:116220. doi: 10.1016/j.socscimed.2023.116220
- O'Farrell, P., Wilson, C., and Shiel, G. (2022). Teachers' perceptions of the barriers to assessment of mental health in schools with implications for educational policy: a systematic review. *Br. J. Educ. Psychol.* 93, 262–282. doi: 10.1111/bjep.12553
- Pecora, G., Laghi, F., Baiocco, R., Baumgartner, E., and Sette, S. (2025). A latent profile analysis of psychological functioning during the COVID-19 pandemic: adolescents' perceived social support and lifestyle behaviours. *Int. J. Psychol.* 60:e70025. doi: 10.1002/ijop.70025
- Pinquart, M. (2017). Associations of parenting dimensions and styles with internalizing symptoms in children and adolescents: a meta-analysis. *Marriage Fam. Rev.* 53, 613–640. doi: 10.1080/01494929.2016.1247761
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., and Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J. Appl. Psychol.* 88, 879–903. doi: 10.1037/0021-9010.88.5.879
- Reijntjes, A., Thomaes, S., Kamphuis, J. H., Bushman, B. J., De Castro, B. O., and Telch, M. J. (2011). Explaining the paradoxical rejection-aggression link: the mediating effects of hostile intent attributions, anger, and decreases in state self-esteem on peer rejection-induced aggression in youth. *Pers. Soc. Psychol. Bull.* 7, 955–963. doi: 10.1177/0146167211410247
- Reiter-Scheidt, K., Papousek, I., Lackner, H. K., Paechter, M., Weiss, E. M., and Aydin, N. (2018). Aggressive behavior after social exclusion is linked with the spontaneous initiation of more action-oriented coping immediately following the exclusion episode. *Physiol. Behav.* 195, 142–150. doi: 10.1016/j.physbeh.2018.08.001
- Roach, A. (2018). Supportive peer relationships and mental health in adolescence: an integrative review. *Issues Ment. Health Nurs.* 39, 723–737. doi: 10.1080/01612840.2018.1496498
- Roulston, C. A., Ahuvia, I., Chen, S., Fassler, J., Fox, K., and Schleider, J. L. (2025). "My family won't let me." Adolescent-reported barriers to accessing mental health care. *J. Res. Adolesc.* 35:e70013. doi: 10.1111/jora.70013
- Steinberg, L., Lamborn, S. D., Dornbusch, S. M., and Darling, N. (1992). Impact of parenting practices on adolescent achievement: authoritative parenting, school involvement, and encouragement to succeed. *Child Dev.* 5, 1266–1281. doi: 10.2307/1131532
- Stellar, J. E., Gordon, A., Anderson, C. L., Piff, P. K., McNeil, G. D., and Keltner, D. (2018). Awe and humility. *J. Pers. Soc. Psychol.* 114, 258–269. doi: 10.1037/pspi0000109
- Stellar, J. E., Gordon, A. M., Piff, P. K., Cordaro, D., Anderson, C. L., Bai, Y., et al. (2017). Self-transcendent emotions and their social functions: compassion, gratitude, and awe bind us to others through prosociality. *Emot. Rev.* 9, 200–207. doi: 10.1177/1754073916684557
- Sun, Z., Hou, Y., Song, L., Wang, K., and Yuan, M. (2023). The buffering effect of awe on negative emotions in self-threatening situations. *Behav. Sci.* 13:44. doi: 10.3390/bs13010044
- Tang, S., Xiang, M., Cheung, T., and Xiang, Y. T. (2020). Mental health and its correlates among children and adolescents during COVID-19 school closure: the importance of parent-child discussion. *J. Affect. Disord.* 279, 353–360. doi: 10.1016/j.jad.2020.10.016
- Thau, S., Derfler-Rozin, R., Pitesa, M., Mitchell, M. S., and Pillutla, M. M. (2015). Unethical for the sake of the group: risk of social exclusion and pro-group unethical behavior. *J. Appl. Psychol.* 100, 98–113. doi: 10.1037/a0036708
- Tu, H. (2020). Does active leisure participation promote psychological capital through peer support in economically disadvantaged children? *PLoS ONE.* 6:e0234143. doi: 10.1371/journal.pone.0234143
- Vaillancourt, T., Brittain, H. L., McDougall, P., and Duku, E. (2013). Longitudinal links between childhood peer victimization, internalizing and externalizing problems, and academic functioning: developmental cascades. *J. Abnorm. Child Psychol.* 41, 1203–1215. doi: 10.1007/s10802-013-9781-5
- Wang, K., Shi, H. S., Geng, F. L., Zou, L. Q., Tan, S. P., Wang, Y., et al. (2016). Cross-cultural validation of the Depression Anxiety Stress Scale—21 in China. *Psychol. Assess.* 28, e88–e100. doi: 10.1037/pas0000207
- Wang, Q., Pomerantz, E. M., and Chen, H. (2007). The role of parents' control in early adolescents' psychological functioning: a longitudinal investigation in the United States and China. *Child Dev.* 78, 1592–1610. doi: 10.1111/j.1467-8624.2007.01085.x
- Wang, W., Xie, X., Wang, X., Lei, L., Hu, Q., and Jiang, S. (2019). Cyberbullying and depression among Chinese college students: a moderated mediation model of social anxiety and neuroticism. *J. Affect. Disord.* 256, 54–61. doi: 10.1016/j.jad.2019.05.061
- Williams, K. D. (2009). Ostracism: a temporal need-threat model. *Adv. Exp. Soc. Psychol.* 41, 275–314. doi: 10.1016/S0065-2601(08)00406-1

- Wolbert, L. S., De Ruyter, D. J., and Schinkel, A. (2018). What attitude should parents have towards their children's future flourishing? *Theory Res. Educ.* 16, 82–97. doi: 10.1177/1477878518765017
- Xu, X. P., and Niu, Z. L. (2019). Peer rejection and subjective well-being in children from needy families: a moderated mediation model. *Chinese J. Clin. Psychol.* 4, 795–799.
- Yap, M. B. H., and Jorm, A. F. (2015). Parental factors associated with childhood anxiety, depression, and internalizing problems: a systematic review and meta-analysis. *J. Affect. Disord.* 175, 424–440. doi: 10.1016/j.jad.2015.01.050
- Yu, T., Xu, J., Jiang, Y., Hua, H., Zhou, Y., and Guo, X. (2022). School educational models and child mental health among K-12 students: a scoping review. *Child Adolesc. Psychiatr. Ment. Health.* 1:32. doi: 10.1186/s13034-022-00469-8
- Yuan, W., Du, Y., and Jiang, T. (2024). How and when awe improves meaning in life: the role of authentic-self pursuit and trait authenticity. *Emotion.* 24, 412–430. doi: 10.1037/emo0001278
- Yue, X., and Zhang, Q. (2023). The association between peer rejection and aggression types: a meta-analysis. *Child Abuse Neglect* 135:105974. doi: 10.1016/j.chiabu.2022.105974
- Zhang, S., Zhang, Y., and Yuan, B. (2018). Role of depression in the association between psychological neglect and peer bullying among junior school students. *Chinese J. Sch. Health.* 10, 1512–1515.
- Zhang, Y., and Zhang, L. (2023). Relationship among aggression, non-suicidal self-injury, and depression in youths. *Iran. J. Public Health.* 8, 1711–1719. doi: 10.18502/ijph.v52i8.13410
- Zhu, J., Yu, C., Bao, Z., Jiang, Y., Zhang, W., Chen, Y., et al. (2017). Deviant peer affiliation as an explanatory mechanism in the association between corporal punishment and physical aggression: a longitudinal study among Chinese adolescents. *J. Abnorm. Child Psychol.* 45, 1537–1551. doi: 10.1007/s10802-016-0259-0
- Zimmer-Gembeck, M. J., Hunter, T. A., Waters, A. M., and Pronk, R. (2009). Depression as a longitudinal outcome and antecedent of preadolescents' peer relationships and peer-relevant cognition. *Dev. Psychopathol.* 2, 555–577. doi: 10.1017/S0954579409000303
- Zou, M., Liu, S., Cheng, C., and Wang, Y. (2024). The relationship between psychological maltreatment and adolescents' aggressive behavior: a moderated mediation model. *Stud. Psychol. Behav.* 22, 282–288.